Visual First Responder: Camera system responds to disasters

Terrorism, major accidents and natural disasters throughout the world present emergency responders with unimaginable challenges.

Often, these situations include severely limited access, precluding the involvement of expert teams who are needed immediately.

The Visual First Responder system delivers capabilities that put these experts on the scene by viewing secure, encrypted video signals from as far as five miles away from the danger.

Developed to transmit live images from inside a chemically, biologically or radiologically contaminated area, the VFR system is rugged and waterproof, allowing decontamination after use. The on-scene camera system sends images to a triple-antenna receiver array that reduces interference and reliably delivers clear images to a command center.

Highly flexible in its physical deployment on the scene, VFR integrates current technology with unique design features to significantly reduce the problems causing poor reception inherent in other wireless video systems.

“Combining off-the-shelf technology with customized circuitry in the video camera, the VFR System transmits at the lower frequency of 900 megahertz,” said INL engineer Kevin Young. “This better delivers a complete signal through objects for display on any monitor.”

In a time of great need throughout the world, the ergonomically-designed, lightweight, battery-operated video camera and its system deliver clear images that permit lifesaving decisions to be made rapidly.

Tested in demanding circumstances, VFR has provided high-quality video from steel office building basements, a West Virginia tunnel, the bottom of a 150-foot fishing vessel at a Seattle pier, and the concrete rubble of an urban search-and-rescue training facility in Oklahoma City.

“Compared with other wireless systems, the Visual First Responder system uses a true diversity receiver, delivers 480 lines of resolution and boasts a range of over 5 miles when using a repeater,” said Young. “In short, it performs magnificently and is the only handheld wireless

system capable of delivering a stable image over the transmission distances that emergency responders require.”